Removal and Remediation of Elbow Lake Dam

Draft ENVIRONMENTAL ASSESSMENT

September 30, 2019

Project Title: **Removal and Remediation of Elbow Lake Dam**

Project Proposed By: Montana Fish, Wildlife & Parks (FWP)
Montana Department of Natural Resources and Conservation (DNRC)

I. General Purpose

The proposed action involves removal of Elbow Lake Dam on the Clearwater River in Missoula County, near Seeley Lake, MT. The project would be undertaken by DNRC and FWP to eliminate an unauthorized structure on the mainstem Clearwater River (DNRC property).

Implementation of the proposed action falls under the legal purview and management responsibilities of state agencies that manage state properties, navigable waterways, and fish and wildlife resources. Compliance with state and federal environmental protection laws, as well as protection and management of public resources necessitate actions to remove the illegal structure located on DNRC property and restore a natural river environment.

II. Location of Project

The proposed project would be implemented on the lower mainstem Clearwater River between the outlet of Salmon Lake and the confluence with the Blackfoot River. The Elbow "Lake" dam is located in the downstream portion of a naturally wide reach of the Clearwater River at the following location (Figure 1):

Township 15N, Range 14W, Section 20 NW1/4 SE1/4, Missoula County.

Latitude: 47.0387 Longitude: -113.3945

III. Need for the Project

Need for the project stems from legal obligations to alleviate ongoing violations of environmental protection laws and to mitigate unauthorized activities occurring on state lands. The proposed actions, objectives, justifications are consistent with management direction and legal responsibilities of both FWP and DNRC.

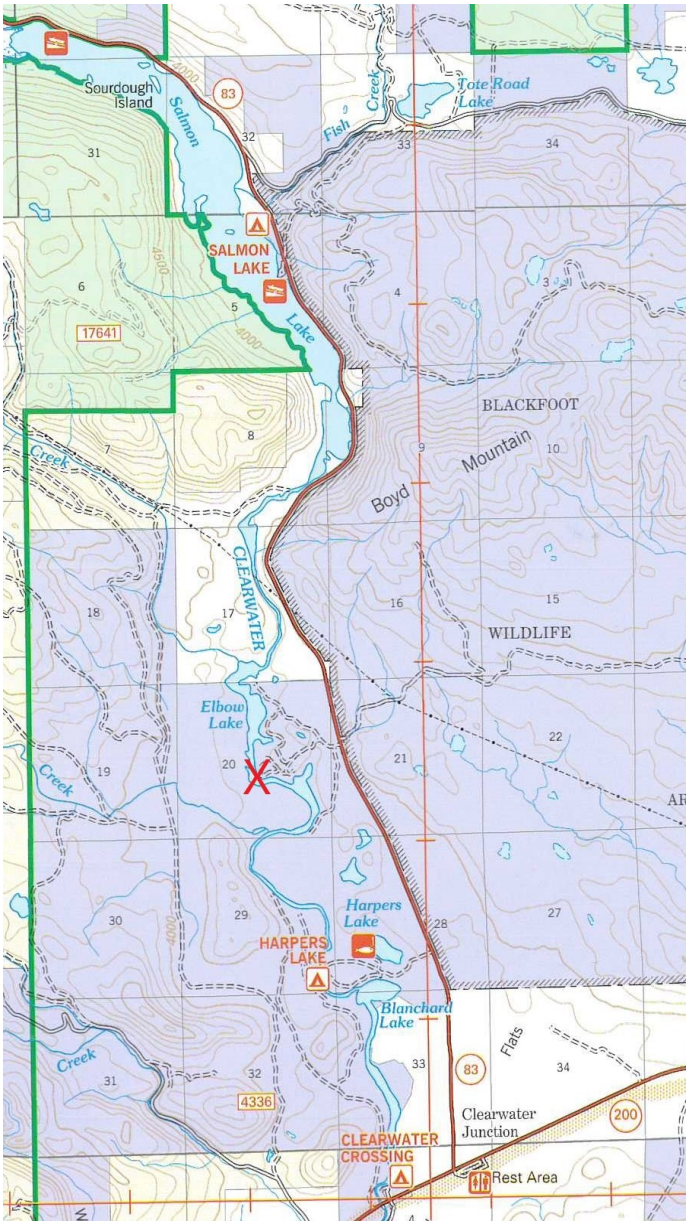

FIGURE 1. Project location (indicated by red X) along the Clearwater River, south of Seeley Lake in Missoula County.

IV. Scope of Project

The project proposes to remove the unauthorized Elbow Lake dam and restore the site to its approximate historic natural condition and elevation. Overall goals are to: (1) alleviate ongoing violations of state and federal regulations on state trust property, (2) restore natural streambed conditions on the Clearwater River in the vicinity of the dam, (3) eliminate the dam that acts as a partial barrier to the natural movement of fish and recreationists, and (4) reduce the probability of continued violations at the site.

This project is expected to cost $3,000-$5,000, which would be covered by FWP and DNRC, with possible additional financial assistance from private grant sources. Project work is expected to be completed in 1-2 days, including redistribution of rock that forms the dam, minor streambank repair, and local revegetation on disturbed streambanks. Work would be completed by a licensed contractor under the supervision of agency personnel.

V. Project Overview and History

The proposed action involves remediation of the unauthorized rock dam located near the outlet of Elbow "Lake" on the lower Clearwater River. The site is located on the downstream portion of a naturally wide lentic (lake-like) reach of the Clearwater River between the outlet of Salmon Lake and the Montana Highway 200 bridge crossing near Clearwater Junction.

The purpose of the project is to return the stream bed and local water surface elevations to their natural and historic condition after many years of artificial impoundment. The dam was originally created more than two decades prior using local river rock. After each spring high-water period, individuals have re-installed displaced rocks and boulders to re-establish a higher impoundment elevation and create an enhanced lentic environment upstream of the structure. The primary purpose of the work (as identified by local residents) was to enhance local water-surface elevation upstream for the benefit of water-based recreation opportunity, aesthetics, perceived benefits to wildlife and easier access for minor water supply.

Although the modified structure was originally authorized by a local permitting entity (Missoula Conservation District, 2006, Natural Streambed and Land Preservation Act "310" permit), this permit was approved under the assumption that a valid and legal water right existed. When all submitted claims were extinguished (Montana State Water Court, Case 76F-22), it was evident that no valid and appropriate water right was in place that justified maintenance of the structure, so the 310 permit was discontinued. Other required permits and authorizations, including the U.S. Army Corps of Engineers 404 permit and DNRC Land Use License, were never obtained. The dam currently exists as an unpermitted artificial structure which spans the width of the Clearwater River (Figures 2 and 3).

In addition to the lack of a valid water right and other legal obligations, the dam creates a number of environmental and river management concerns identified by natural resource managers and professionals. One major issue is that the structure creates an obstruction to the upstream migration for some species and sizes of fish. This concern is magnified in late fall through early spring when river flows are at base level and the dam height has typically been increased to maximum level. Other concerns include: a floating/boating obstruction for public river users (infrequent); enhancement of artificial lentic habitat that favors illegally introduced, non-native fish species such as northern pike (*Esox Lucius*) and smallmouth bass (*Micropterus dolomieu*); and other minor concerns described in the evaluation below.

The proposed action involves removal of the artificial structure and restoring the streambed to its approximate original elevation, composition and longitudinal profile. This course of action would address the identified environmental and river management concerns and alleviate current legal deficiencies associated with the unauthorized structure located entirely on public land. Remediation work is proposed by state land and natural resource managers (DNRC and FWP).

Figure 2. Elbow Lake Dam being re-constructed by members of the public.

FIGURE 3. Elbow Lake dam at full height in late summer.

VI. Environmental Impact Review Checklist

Project Title: Removal and Remediation of Elbow Lake Dam
Project Proponents: Montana Department of Natural Resources and Conservation (DNRC), Montana Fish, Wildlife & Parks (FWP)
Description of Project: Removal of unauthorized rock dam on the lower Clearwater River and restoration of site to its natural and historic condition.

A. POTENTIAL IMPACTS TO THE PHYSICAL ENVIRONMENT

Will the proposed action result in potential impacts to:	Unknown	Potentially Significant	Minor	None	Can Be Mitigated	Comments Provided
1. Geology and soil quality, stability and moisture			X		X	A.1
2. Air quality or objectionable odors				X		
3. Water quality, quantity and distribution (surface or groundwater)			X		X	A.3
4. Existing water right or reservation			X		X	A.4
5. Vegetation cover, quantity and quality			X		X	A.5
6. Unique, endangered, or fragile vegetative species				X		
7. Terrestrial or aquatic life and/or habitats			X		Beneficial	A.7
8. Unique, endangered, or fragile wildlife or fisheries species		X			Beneficial	A.8
9. Introduction of new species into an area				X		
10. Changes to abundance or movement of species		X			Beneficial	A.10

Explanation of Impacts to the Physical Environment

A.1. The dam is primarily composed of local river rock (approx. 1.5 to 3 feet diameter) transported from the streambed immediately upstream and downstream of the dam. Remediation would restore the natural integrity and slope of the streambed and remove an unnatural obstruction that illegally impedes natural river processes and recreationists utilizing this river reach. Stability of the local streambed and river channel would be expected to increase after project implementation.

A.3. Minor increases in turbidity would be expected during decommissioning of the dam and transport of rock to the adjacent stream bed. Project would be planned for a low-water period when equipment access is optimal and local biological impacts associated with turbidity would be minimized. A Montana Department of Environmental Quality (DEQ) 318 Authorization for short-term turbidity increases would be obtained prior to project initiation.

Removal of the structure is expected to reduce local surface-water elevations from 0 to 4 feet upstream of the dam in the area currently affected by impoundment (estimated to extend 700-900 m [0.44-0.56 mile] upstream of the dam). This impoundment is an unnatural and currently unauthorized river feature. Without the structure, the local river environment would continue to be wider than some adjacent upstream and downstream reaches but would be shallower in the area currently affected by the impoundment.

A.4. Examination of associated water rights by the Montana State Water Court and subsequent ruling negated any claimed water rights (including storage rights) associated with the structure (Montana State Water Court, Case 76F-22). Pertinent upstream water rights on adjacent private land, confirmed under the Blackfoot River Basin adjudication process, can easily be perpetuated at the legal point of diversion without the presence of the dam.

A.5. Direct impacts to shoreline vegetation during deconstruction would be minimal. Currently eroding bank locations at ends of dam structure would be re-sloped and re-seeded with native vegetation as part of the project.

Removal of the dam would reduce water levels in the area currently influenced through impoundment. This would likely indirectly affect the composition and quantity of shoreline vegetation in this reach as the river corridor returns to a natural condition. Littoral areas along the river margins may also be more susceptible to invasion by introduced fragrant water lilies (*Nymphaea odorata*).

A.7, A.8, A.10. Removal of the dam would improve connectivity for native and desirable aquatic species attempting to migrate upstream through this reach. The mainstem Clearwater River represents a major connective corridor between the upper Clearwater Lake/ River system and the mainstem Blackfoot River system. Native and sport fish species affected include bull trout[1] (*Salvelinus confluentus*), westslope cutthroat trout[2] (*Oncorhynchus clarki lewisi*), westslope cutthroat x rainbow trout hybrids (*O. clarki lewisi* x *O. mykiss*), brown trout (*Salmo trutta*), mountain whitefish, largescale sucker (*Catostomus macrocheilus*), longnose sucker (*Catostomus catostomus*) , northern pikeminnow (*Ptychocheilus oregonensis*), redside shiner (*Richardsonius balteatus*), sculpin (*Cottus* spp.), and others. Illegally introduced, non-native northern pike (*Esox lucius*) benefit from the dam and impoundment as it enhances suitable lentic habitat for the species.

The benefits and impacts to local wildlife species are mixed at the project scale. For instance, impoundment enhances deeper, peripheral wetlands used by some waterfowl species and beaver, while shorebirds, amphibians, and other species may benefit from shallower wetlands and unmodified habitat along the river margins. Overall, FWP considers unmodified, natural riverine habitat to be the preferred and most beneficial state for this river reach.

[1] A threatened species under the federal Endangered Species Act.
[2] A Montana Species of Concern (SOC). SOC is a native animal (or plant) breeding in Montana and considered to be “at risk” due to declining population trends, threats to its habitats, and/or restricted distribution. Montana's SOC listing highlights species in decline and encourages conservation efforts to reverse population declines and prevent the need for future listing as Threatened or Endangered Species under the Federal Endangered Species Act. Further information available at http://fwp.mt.gov/fishAndWildlife/species/speciesOfConcern/ (accessed 27 September 2019).

B. POTENTIAL IMPACTS ON THE HUMAN ENVIRONMENT

Will the proposed action result in potential impacts to:	Unknown	Potentially Significant	Minor	None	Can Be Mitigated	Comments Provided
1. Noise and/or electrical effects			X		X	B.1
2. Land use				X		
3. Risk and/or health hazards				X		
4. Community impact			X		X	B.4
5. Public services/taxes/utilities				X		
6. Potential revenue and/or project maintenance costs			X		X	B.6
7. Aesthetics and recreation			X		X	B.7
8. Cultural and historic resources				X		
9. Evaluation of significance			X		X	B.9
10. Generate public controversy			X		X	B.10

Explanation of Impacts to the Human Environment

B.1. Excavator use would create high noise levels temporarily while the dam is being dismantled. To mitigate, work would be completed when local residents are largely absent (e.g., a weekday in early spring or late fall).

B.4, B.7. Removal of the dam would modify the character of the river upstream of the structure and restore it to a natural condition. The currently enhanced lentic environment is preferred by some local residents for recreation activities and aesthetics. Others may find that the decreased water level changes the type of recreational use. In addition, site restoration may or may not affect property values, but does not affect use of the land itself. In spite of the proposed changes, individual preferences do not supersede state and federal environmental protection laws, state water use laws, or state management direction for natural rivers.

B.6. Removal of the dam would not directly affect potential revenue or result in new maintenance needs. Dam removal would eliminate the need for annual maintenance associated with the structure (i.e., as it is rebuilt each summer after high water). However, the long-term presence of the dam and associated water impoundment upstream have contributed to an expectation that the artificially enhanced “lake-like” environment would continue. This expectation and the local social benefits of the dam have been expressed to both FWP and DNRC by local lessees and residents.

B.9. Removal of the dam would alleviate a significant, ongoing violation of stream permitting and environmental protection laws. It would also alleviate clear impacts to migratory fish and other wildlife. At the same time, dam removal is expected to result in a noticeable change for local landowners and lessees along the affected portion of the Clearwater River.

B.10. Although several neighboring state lessees and local property owners object to removing the dam, perceived overall public controversy is low. Several local conservation groups and other Missoula County residents have expressed support for the preferred alternative.

VII. Narrative Evaluation and Comment

This environmental assessment fundamentally addresses removal of an unauthorized, channel-spanning structure on the lower Clearwater River that causes obvious environmental impacts. Although project proponents acknowledge minor site-specific and species-specific environmental benefits, the primary rationale for retention of the structure involves enhanced social amenities. Unfortunately, these amenities are not associated with a valid water right or aligned with natural resource management direction for responsible agencies.

Removal of the structure could be accomplished without causing significant environmental impacts. Minor impacts associated with dam decommissioning could easily be mitigated.

VIII. Discussion and Evaluation of Reasonable Alternatives

1. No Action Alternative. *Leave dam structure in place, with no authorization for future work or maintenance.*

   The structure is currently not authorized under Montana water law or local stream permitting jurisdictions. Leaving the structure in place does not satisfy legal requirements, permitting deficiencies, or mitigate ongoing environmental impacts.

2. Proposed Preferred Alternative. *Management agency removal of artificial dam structure and restoration of project area riverbed to approximate natural condition.*

   Removal of the dam structure could be completed in less than one day, with minimal short-term environmental impacts. This action would alleviate ongoing permitting deficiencies, meet state water rights requirements, and provide desired environmental benefits associated with a natural river environment.

   Removal of the dam would not meet the objectives of local residents who largely prefer the effects of water impoundment upstream of the structure. If the dam were removed, the Elbow “Lake” portion of the Clearwater River would continue to be a wider portion of the river corridor, but water depths would be reduced by 0-4 feet, and flooding of peripheral riparian zones and wetland areas would be reduced. However, as mentioned previously, the “benefits” of the dam desired largely by the local residents, cannot be achieved through legal means.

3. Alternate Action Alternative. *Require removal of the structure and remediation of site by individuals responsible for construction and maintenance.*

   Specific individuals responsible for unauthorized construction and maintenance of the dam have not come forward or been identified through investigation. Responsible agencies would prefer to alleviate permitting and water right deficiencies by initiating and completing the proposed action, rather than relying on voluntary remediation completed by local residents or a criminal investigation with required remediation.

4. Alternative Considered, but Not Analyzed in Detail: *Authorize existing structure with continuation of customary maintenance by local residents and lessees, while pursuing acquisition of legal water rights and applicable permits.*

   DNRC and FWP considered an alternative which would result in authorization and continued maintenance of the dam. Similar to the "No Action" Alternative, the lack of a legal water right and other applicable permits--which would allow water impoundment and storage at this location--prevented further exploration of this alternative.

   Applicable Water Rights Summary:

   The source of water, the Clearwater River, is located within the boundaries of the Upper Clark Fork River Basin. This basin was legislatively closed to all new appropriations of surface water in 1995, and as the law is codified, DNRC cannot accept or process any applications for surface water rights. The basin closure statue is found in Montana Code Annotated (MCA) 85-2-335 and 85-2-336. The Upper Clark Basin closure statute does allow for DNRC to accept a Beneficial Water Use Application for the storage of surface water. Since the inception of the closure, DNRC has not received an application for storage within the basin.

   Any successful application would require that statutory criteria be met, including physical availability, legal availability, adverse effect, possessory interest in the place of use, and adequate means of diversion. It is DNRC's position that the applicant would not be able to meet the statutory criteria and that, although an application may be submitted, it is highly unlikely to meet the criteria for issuance.

   Water cannot be found to be legally available due to the existence of instream-flow water rights held in the public trust by FWP. These instream-flow water rights are commonly not met during the later summer months, resulting in the shutting off of junior water users in the basin when flows in the Blackfoot River fall below 700 cubic feet per second (cfs). The addition of a new water right in the basin would potentially increase the frequency and duration of calls made on junior users, resulting in adverse effect to these existing water rights.

   The location of the reservoir created by the impoundment is on DNRC School Trust Lands, and as such the applicant would have to be DNRC, as the existing cabin lease holders and private landowners do not have possessory interest in the location of the dam or flooded streambed. In addition, a hand-stacked rock dam would not meet the criteria of adequate means of diversion because the dam does not have a control structure, emergency-bypass spillway or other engineered features that would adequately allow for the release of stored water or safe operation of the dam.

   The impoundment of water increases the surface area of Elbow Lake, and the increased evaporation from the impoundment would result in a consumptive use of water. This increased consumptive use would result in adverse effect to existing downstream water users, due to the loss of water in a system that is already over-appropriated with annual calls for water being made that require junior users to stop diverting water.

   To successfully obtain a Beneficial Water Use Permit this evaporation would need to be replaced by retiring an existing water right and changing its purpose to mitigation.

Mitigation in a closed basin requires that the depletion-causing adverse effect, in this case evaporation, be replaced in amount, timing and location. Therefore, a successful applicant would need to find an existing water right to purchase, prove its beneficial use, and successfully obtain an Authorization to Change a Water Right from DNRC. Any mitigation water would have to come from the Clearwater drainage, as this is the location of the depletion-causing adverse effect, and DNRC is not aware of any large consumptive-use water rights in this drainage that could be purchased and changed. Further, the purchase of said water right for mitigation would need to be funded by DNRC School Trust Lands as they would be the owner and applicant of any mitigation water right.

In conclusion, due to the complexity of the applications required, the high potential for adverse effect to existing water users, the lack of potential mitigation water available in the drainage, and the cost incurred to DNRC School Trust Lands, as well as the liability of owning and maintaining a dam and reservoir on DNRC School Trust Lands, DNRC does not consider obtaining a water right for the existing non-permitted dam to be a viable option.

IX. Environmental Assessment Conclusion Section

1. Other groups or agencies contacted, or which may have overlapping jurisdiction:

   Missoula Conservation District. Long history of involvement at affected site through Montana Natural Streambed and Land Preservation Act (310) permitting process and jurisdiction.

   U.S. Army Corps of Engineers. Responsible for federal Clean Water Act 404 permit administration. The U.S. Army Corps of Engineers staff is aware of the project and ongoing violation, but have not been involved to date.

   DNRC Water Resources Division. The Missoula Regional Water Resources Office was consulted regarding water rights policy, procedures and law.

2. Evaluation and listing of mitigation, stipulation, or other control measures enforceable by the agency or another government agency:

   Both the Missoula Conservation District and U.S. Army Corps of Engineers are aware of ongoing permitting violations and are prepared to address legal deficiencies if the proposed action in this Draft EA is not pursued. The dam and associated impoundment are located on state (DNRC managed) property and utilize a public watercourse without a land use authorization or a valid water right.

   All public entities with applicable jurisdiction are anticipating and support the dam removal alternative as the most practical way to bring about prompt compliance with the law. This alternative would include mitigation measures and stipulations to minimize environmental impacts during remediation at the site. Mitigation measures include: completing work during low-water conditions, compliance with DEQ 318 permit provisions to protect water quality, development of contract provisions to minimize adverse environmental effects, and administration of the contract to ensure compliance with contract and permitting provisions.

3. Is an Environmental Impact Statement (EIS) required?

   No. We conclude, from this review, that the proposed activities would have an overall positive impact on the physical and human environment and will therefore not require the extensive analysis associated with an EIS.

4. Level of public involvement.

   The intention of DNRC and FWP to pursue removal and remediation of Elbow Lake Dam has been conveyed to affected landowners and lessees directly via prior official notification letters from DNRC in June 2019. These letters supplement informal communication by agency personnel with affected residents on numerous occasions over the past 15 years.

   The public would be notified as follows, to comment on the proposed Removal and Remediation of Elbow Lake Dam Project, including its draft EA and alternatives:

   - A news release would be prepared and distributed to a standard list of media outlets interested in FWP Region 2 issues. This news release would also be posted on FWP Region 2's website http://fwp.mt.gov/regions/r2/.
   - One legal notice would be published in each of these newspapers: *Independent Record* (Helena), *Missoulian*, and *Seeley Swan Pathfinder* (Seeley Lake).
   - Copies would be available at the FWP Region 2 Headquarters in Missoula and the FWP state headquarters in Helena.
   - Copies of this draft EA would be mailed (or notification of its availability emailed) to neighboring landowners and other interested parties (individuals, groups, agencies) to assure their knowledge of the proposed action.
   - Public notice on FWP's webpage: http://fwp.mt.gov ("News," then "Recent Public Notices"). The Draft EA would also be available on this website, along with the opportunity to submit comments online.

   Copies of this EA may be obtained by mail from Region 2 FWP, 3201 Spurgin Rd., Missoula MT, 5980; by phoning 406-542-5540; by emailing shrose@mt.gov; or by viewing FWP's website http://fwp.mt.gov under Public Notices.

   This level of public notice and participation is appropriate for a project of this scope having few physical and human impacts, many of which can be mitigated.

5. Public Comment Period

   The public comment period will extend for thirty (30) days beginning September 30, 2019. Comments must be received by FWP no later than October 29, 2019 and can be mailed to the address below:

   Region 2 FWP
   Attn: Elbow Lk Dam
   3201 Spurgin Rd
   Missoula, MT 59804

or emailed to Sharon Rose at shrose@mt.gov

6. Person(s) responsible for preparing the EA.

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